CLAIMS

What is claimed is:

1.   A system for interconnecting a plurality of remote devices to a site controller in an automated monitoring system via a wireless communication network, the automated monitoring system configured for monitoring and controlling the plurality of remote devices using a host computer adapted to communicate with the site controller via a communication network, the system comprising;

     a plurality of transceivers having unique identifiers, each of the plurality of transceivers configured for communication with one of the plurality of remote devices and configured to receive a sensor data signal from the corresponding remote device and provide a data message over the wireless communication network using a predefined communication protocol, the data message comprising the corresponding unique identifier and sensor data signal; and

     a plurality of repeaters having unique identifiers, each of the plurality of repeaters disposed in relation to the plurality of transceivers such that each of the plurality of repeaters is in communication with at least one of the plurality of transceivers via the wireless communication network and configured to receive the data message from the corresponding transceiver and provide an outgoing data message over the wireless communication network using the predefined communication protocol, the outgoing data message including the data message and the corresponding unique identifier for the repeater.

2.   The system of claim 1, wherein the wireless communication network involves radio frequency communication.

3.   The system of claim 1, wherein the wireless communication network involves low power radio frequency communication.

1   4.   The system of claim 1, wherein the predefined communication protocol
2   comprises a data packet comprising:
3   a receiver address identifying the receiver of the data packet;
4   a sender address identifying the sender of the data packet; and
5   a command indicator specifying a predefined command code;

1   5.   The system of claim 1, wherein each of the plurality of transceivers and
2   repeaters are configured to implement a plurality predefined communication
3   protocols.

1   6.   The system of claim 1, wherein the plurality of transceivers and the plurality
2   of repeaters are further configured to receive a command message via the wireless
3   communication network

1   7.   The system of claim 1, wherein one of the plurality of transceivers further
2   comprises one of the plurality of repeaters.

1   8.   The system of claim 4, wherein the data packet further comprises a data
2   payload and a checksum field for performing a redundancy check.

1   9.   The system of claim 8, wherein the data packet further comprises:
2   a packet length indicator which indicates a total number of bytes in the
3   current packet;
4   a total packet indicator which indicates the total number of packets in the
5   current message; and
6   a current packet indicator which identifies the current packet; and
7   a message number identifying the current message.

1   10.   The system of claim 9, wherein the data packet further comprises a preface
2   and a postscript.

1   11.   An automated monitoring system for monitoring and controlling a plurality of

2   remote devices, comprising:

3   a plurality of transceivers having unique identifiers, each of the plurality of

4   transceivers configured for communication with one of the plurality of remote devices

5   and configured to receive a sensor data signal from the corresponding remote device

6   and provide a data message over a wireless communication network using a

7   predefined communication protocol, the data message comprising the corresponding

8   unique identifier and sensor data signal;

9   a plurality of repeaters having unique identifiers, each of the plurality of

10   repeaters disposed in relation to the plurality of transceivers such that each of the

11   plurality of repeaters is in communication with at least one of the plurality of

12   transceivers via the wireless communication network and configured to receive the

13   data message from the corresponding transceiver and provide an outgoing data

14   message over the wireless communication network using the predefined

15   communication protocol, the outgoing data message including the data message and

16   the corresponding unique identifier for the repeater;

17   a site controller configured to communicate with the plurality of repeaters and

18   the plurality of transceivers via the wireless communication network using the

19   predefined communication protocol;

20   a host computer configured to communicate with the site controller via a

21   communications network.

1   12.   The system of claim 11, wherein the wireless communication network

2   involves radio frequency communication.

1   13.   The system of claim 11, wherein the communication network is a wide are a

2   network.

1   14.   The system of claim 11, wherein the predefined communication protocol

2   comprises a data packet comprising:

3   a receiver address identifying the receiver of the data packet;

4   a sender address identifying the sender of the data packet; and

5   a command indicator specifying a predefined command code;

1 15. The system of claim 11, wherein the plurality of transceivers and the plurality
2 of repeaters are further configured to receive a command message via the wireless
3 communication network and provide a response message associated with the
4 corresponding remote device.

1 16. The system of claim 11, wherein one of the plurality of transceivers further
2 comprises one of the plurality of repeaters.

1 17. The system of claim 14, wherein the data packet further comprises a data
2 payload and a checksum field for performing a redundancy check.

1 18. The system of claim 17, wherein the data packet further comprises:
2 a packet length indicator which indicates a total number of bytes in the
3 current packet;
4 a total packet indicator which indicates the total number of packets in the
5 current message; and
6 a current packet indicator which identifies the current packet; and
7 a message number identifying the current message.

1 19. The system of claim 18, wherein the data packet further comprises a preface
2 and a postscript.